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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,130	12/10/2003	Guido Vezzu	015258-061900US	8274
20350	7590	11/04/2004	EXAMINER	
TOWNSEND AND TOWNSEND AND CREW, LLP TWO EMBARCADERO CENTER EIGHTH FLOOR SAN FRANCISCO, CA 94111-3834			LE, JOHN H	
			ART UNIT	PAPER NUMBER
			2863	

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/733,130

Applicant(s)

VEZZU ET AL.

Examiner

John H Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/10/2003 by a preliminary amendment.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-10 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/10/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This application is in condition for allowance except for the following formal matters:

Specification

1. The following guidelines illustrate the preferred layout and content for patent applications. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

The following order or arrangement is preferred in framing the specification and, except for the reference to "Microfiche Appendix" and the drawings, each of the lettered items should appear in upper case, without underlining or bold type, as section headings. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) Title of the Invention.
 - (b) Cross-References to Related Applications.
 - (c) Statement Regarding Federally Sponsored Research or Development.
 - (d) Reference to a "Microfiche Appendix" (see 37 CFR 1.96).
 - (e) Background of the Invention.
 1. Field of the Invention.
 2. Description of the Related Art including information disclosed under 37 CFR 1.97 and 1.98.
 - (f) Brief Summary of the Invention.
 - (g) Brief Description of the Several Views of the Drawing(s).
 - (h) Detailed Description of the Invention.
 - (i) Claim or Claims (commencing on a separate sheet).
 - (j) Abstract of the Disclosure (commencing on a separate sheet).
 - (k) Drawings.
 - (l) Sequence Listing (see 37 CFR 1.821-1.825).
2. The disclosure is objected to because of the following informalities:

Heading for each section of specification should be provided (Related Art, Background, Brief Description of the Figures, Brief Summary of the Invention, Detail Description).

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Appropriate correction is required.

3. The abstract of the disclosure is objected to because the abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. Correction is required. See 37CFR 1.72.

Appropriate correction is required.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Allowable Subject Matter

4. Claims 1-10 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

In combination with other limitations of the claims, the cited prior arts fails to teach a method for the estimating of the residual service life of an apparatus which is subjected to a wear during operation, with the following steps: a) for at least one characteristic parameter (T) which is sensitive to the wear (V), a relationship is determined to a time parameter (A) which is representative for the operating period; b) a limit value (G) is fixed for the characteristic parameter (T) which gives the maximum permitted wear; c) a code field (KF) is established which gives a relationship between the characteristic parameter (T), the time

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parameter (A) and the wear (V); e) the instantaneously present wear (V) is determined from the actual values with reference in each case to the code field (KF); f) starting from the instantaneous actual value of the characteristic parameter (T), a determination is made by means of extrapolation to the limit value (G) of the end value of the time parameter (A) for which the maximum permitted wear is reached; g) the residual service life (RL) is estimated by a comparison of this end value with the value for the time parameter which belongs to the instantaneously present wear, as recited in claim(s) 1.

U.S. Patent No. 6,542,853 discloses a life estimation device which numerically measures the damage to a machine such as an engine accurately to estimate, the life of the machine accurately without requiring skill. A load map of the two-dimensional distribution of the operation parameters of an engine is made. In accordance with the weighted integration time at each level of the load map, the actual damage to the engine for a certain lapse of time is calculated. By operating the engine beforehand, a correspondence relation L2 between the magnitude of the damage and the life H is predetermined. The life H1 corresponding to the calculated actual is determined in accordance with the predetermined correspondence relation L2 and the H1 is outputted as the estimated life of the engine. 853' fails to specify steps of a) for at least one characteristic parameter (T) which is sensitive to the wear (V), a relationship is determined to a time parameter (A) which is representative for the operating period; b) a limit value (G) is fixed for the characteristic parameter (T) which gives the maximum permitted wear; c) a code field (KF) is established which

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gives a relationship between the characteristic parameter (T), the time parameter (A) and the wear (V); e) the instantaneously present wear (V) is determined from the actual values with reference in each case to the code field (KF); f) starting from the instantaneous actual value of the characteristic parameter (T), a determination is made by means of extrapolation to the limit value (G) of the end value of the time parameter (A) for which the maximum permitted wear is reached; g) the residual service life (RL) is estimated by a comparison of this end value with the value for the time parameter which belongs to the instantaneously present wear, as now recited in claim 1 of the present invention.

US 2002/0107589 A1 discloses a method and a device are proposed for determining parameters describing changes in a technical system caused by ageing, usage-dependent performance quantities being ascertained in the system. In this context, using a wear and tear model, a correlation is produced between the ascertained performance quantities and the parameters describing changes in the system caused by ageing, and subsequently these parameters, or quantities derived therefrom, such as remaining service life, probability of malfunction, or quality of a product, calculated internal to the system at any point of time as desired. 589' fails to specify steps of a) for at least one characteristic parameter (T) which is sensitive to the wear (V), a relationship is determined to a time parameter (A) which is representative for the operating period; b) a limit value (G) is fixed for the characteristic parameter (T) which gives the maximum permitted wear; c) a code field (KF) is established which gives a relationship between the characteristic parameter (T), the time parameter (A) and the wear

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(V); e) the instantaneously present wear (V) is determined from the actual values with reference in each case to the code field (KF); f) starting from the instantaneous actual value of the characteristic parameter (T), a determination is made by means of extrapolation to the limit value (G) of the end value of the time parameter (A) for which the maximum permitted wear is reached; g) the residual service life (RL) is estimated by a comparison of this end value with the value for the time parameter which belongs to the instantaneously present wear, as now recited in claim 1 of the present invention.

WO 0218879A discloses a method and computer-based apparatus for monitoring the degradation of, predicting the remaining service life of planning maintenance for, an operating system are disclosed. Diagnostic information on degradation of the operating system is obtained through measurement of one or more performance characteristics by one or more sensors onboard and proximate the operating system. It is preferred that the sensor data are validated to improve the accuracy and reliability of the service life predictions. The condition or degree of degradation of the operating system is presented to a user by way of one or more calculated, numeric degradation figures of merit that are trended against one or more independent variables using one or more mathematical techniques. Furthermore, more than one trendline and uncertainty interval may be generated for a given degradation figure of merit/independent variable data set. The trendlines and uncertainty intervals are subsequently compared to one or more degradation figure of merit thresholds to predict the remaining service life of the operating system. WO 0218879A fails to specify

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steps of a) for at least one characteristic parameter (T) which is sensitive to the wear (V), a relationship is determined to a time parameter (A) which is representative for the operating period; b) a limit value (G) is fixed for the characteristic parameter (T) which gives the maximum permitted wear; c) a code field (KF) is established which gives a relationship between the characteristic parameter (T), the time parameter (A) and the wear (V); e) the instantaneously present wear (V) is determined from the actual values with reference in each case to the code field (KF); f) starting from the instantaneous actual value of the characteristic parameter (T), a determination is made by means of extrapolation to the limit value (G) of the end value of the time parameter (A) for which the maximum permitted wear is reached; g) the residual service life (RL) is estimated by a comparison of this end value with the value for the time parameter which belongs to the instantaneously present wear, as now recited in claim 1 of the present invention.

U.S. Patent No. 6,671,647 discloses a method and equipment which permit the life of a structural member put under a high in-service temperature environment to be assessed precisely and quickly, a method of assessing the life of a member subjected to a high in-service temperature for a long period comprising the steps of: determining a Larson-Miller parameter for the member whose life is to be assessed from the in-service temperature and a service time period during which the member is used in-service temperature, and calculating the creep damage degree on the basis of cumulative damage rules from the hardness and stress of the member to establish data; and approximating the

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relationship between the Larson-Miller parameter and the creep damage degree by an expression including an exponential function. 647' fails to specify steps of a) for at least one characteristic parameter (T) which is sensitive to the wear (V), a relationship is determined to a time parameter (A) which is representative for the operating period; b) a limit value (G) is fixed for the characteristic parameter (T) which gives the maximum permitted wear; c) a code field (KF) is established which gives a relationship between the characteristic parameter (T), the time parameter (A) and the wear (V); e) the instantaneously present wear (V) is determined from the actual values with reference in each case to the code field (KF); f) starting from the instantaneous actual value of the characteristic parameter (T), a determination is made by means of extrapolation to the limit value (G) of the end value of the time parameter (A) for which the maximum permitted wear is reached; g) the residual service life (RL) is estimated by a comparison of this end value with the value for the time parameter which belongs to the instantaneously present wear, as now recited in claim 1 of the present invention.

Contact Information

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John H Le whose telephone number is 571-272-2275. The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Barlow can be reached on 571-272-2269. The fax

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phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John H. Le

Patent Examiner-Group 2863

October 20, 2004



John Barlow
Supervisory Patent Examiner
Technology Center 2800